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REED SMITH SHAW & McCLAY

1200 18TH STREET, N.W.

WASHINGTON, D.C. 20036

202-457-6100

FAX 202-457-6113

WRITER'S DIRECT DIAL NUMBER

(202) 457-8646

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PITTSBURGH, PA  
PHILADELPHIA, PA  
HARRISBURG, PA  
McLEAN, VA  
PRINCETON, NJ

January 10, 1995

Mr. William F. Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

CORRECTED COPY - PRIOR  
FILING MISSING ATTACHED  
FIGURES

Re: Notice of Ex Parte Contact  
PR Docket No. 93-61

Dear Mr. Caton:

DOCKET FILE COPY ORIGINAL

The attached statement of MobileVision, L.P., is respectfully submitted in response to Metricom's ex parte filing of December 29, 1995. Two copies of this notice are being submitted in accordance with Section 1.1206(a)(1).

Metricom's efforts to elevate their status to a service co-equal to licensed services is inappropriate in a proceeding whose purpose is to define the licensing and use of LMS services. Metricom would go even beyond that goal, however, since its latest written ex parte communication would actually create presumptions and rules that would have the effect of making its service superior to the licensed services in the band since, under their statement of "needs," they would require immunity from any claims of interference. As the attachment shows, it is Metricom that will be the pervasive source of interference to Part 15 users rather than LMS providers.

The Commission should not allow Metricom to contort the purpose of this proceeding to create a new protected but unlicensed service. Nor should the Commission prohibit necessary functions of LMS or impede LMS providers from delivering those services without interference from unlicensed activities in the interest of a system provider who would effectively block not only LMS services, the subject of this rulemaking, but would critically interfere with other Part 15 applications.

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# REED SMITH SHAW & MCCLAY

Mr. William F. Caton  
January 10, 1995  
Page 2

Please associate this material with the record in this proceeding.

Sincerely,

REED SMITH SHAW & MCCLAY

A handwritten signature in black ink, appearing to read "John J. McDonnell", written over the typed name.

John J. McDonnell

Enclosure  
JJM/agw  
cc: Attached Service List

## **Response to Metricom Letter, H Rivera, December 29, 1995**

### **Introduction**

In a letter to Lauren J Belvin, Senior Legal Advisor to Commissioner James H Quello, Metricom have listed a set of conditions that they desire with respect to PR Dkt. No. 93 - 61, concerning AVM/LMS. These conditions are constructed such that Part 15 devices, and Metricom's wide area data network, in particular, are effectively raised to a licensed status and are free to interfere with the AVM/LMS services at will. In addition Metricom seek to restrict the AVM/LMS services in as many ways as possible and to strip the licensed operators of any means of resolving interference issues.

The record is clear, MobileVision and others, including Metricom, have presented detailed analysis which shows that in isolated cases interference from a Part 15 site in a system, such as Metricom's in particular, will cause an LMS site to be rendered inoperable. In addition, it has been shown that the resolving of such interference is relatively simple and that in no case need the Part 15 site be put off the air.

The Metricom system design is capable of causing interference to virtually all other Part 15 devices at a level that far exceeds any interference issues with LMS. Indeed, if Part 15 systems are to be designed such that they are capable of withstanding interference on a level that is presented by the Metricom system, then they have no need to worry at all about the isolated, and simply remedied cases presented by LMS.

### **Rebuttable Presumption of Interference**

According to Metricom, there should be an irrebuttable presumption of non-interference from Part 15 devices, theirs in particular. If this presumption is based on an antenna height restriction, Metricom state an "absolute minimum" of 15 meters, approximately 50 feet<sup>1</sup>. The analysis has been clear and irrefutable: at 50 feet, even taking into account the period of time that the Metricom transmissions are within an LMS sub-band, an LMS site will experience serious desensitization if the Metricom site is within 2.8 miles<sup>1</sup>. If the antenna height is restricted to 15 feet, then the distance is reduced to 1.5 miles. Metricom's own description of their "Ricochet" system states that transmitters will be situated 0.25 to 1 mile apart. Thus even with a 15 foot antenna restriction, every LMS site could have at least one interfering Metricom transmitter. Also if a height restriction were in place, there is nothing to stop Metricom deploying more transmitters, i.e. one every 0.1 miles, in order to maintain their signal strengths. Thus, the LMS provider will constantly be under threat of being put off the air. It is imperative that the LMS provider has recourse to being able to resolve the interference

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<sup>1</sup> Reference Table 2, page 11 of "Desensitization Calculations for Part 15 Devices and Wideband LMS", December 9, 1994, G K Smith; antenna height adjusted from 25 feet to 50 feet.

It should be noted that interference to an LMS site by a Metricom transmitter, or indeed any other Part 15 device, can be avoided without the need to put the Part 15 device off the air. For example, the following simple methods are available:

- a) The LMS sub-band is restricted and it is a simple matter for the Metricom device to avoid those frequencies at particular stations. The Metricom system is at liberty to use the entire band.
- b) The time that the device is transmitting can be reduced such that the effective interference is less<sup>2</sup>. This can also be achieved by hopping to channels within the LMS sub-band less of the time i.e. still allowing the use of the entire band.
- c) Directional antennas could be used. At the extreme it is possible to simply ring an LMS site with a few Metricom sites using directional antennas pointing away from the LMS site.

### **LMS Services**

Metricom wishes to limit the services offered by LMS and prohibit any interconnection in the LMS sub-band. Although it is clear that Metricom do not wish to have any restrictions on their service, (even though the antenna height restriction would not harm their services in any way), they clearly want to make sure that LMS services fail in the marketplace. The record is clear that LMS services need to provide location, data and voice services. The best way, and the most spectrally efficient way, is to use narrow band links. The use of narrow band links does not introduce any extra interference threat from or to Part 15 devices and is hence irrelevant.

The Metricom objection cannot be based on interference issues as a simple observation of the interference environment that the Metricom system is presenting to the Part 15 community shows that it is potentially a much greater threat than any LMS system. For example, Figure 1 shows Metricom sites spaced at 0.25 miles and the size of the dots shows the area within which any indoor Part 15 device, such as a cordless telephone, will be subject to blocking from the Metricom transmitter. Figure 1 therefore represents the environment that other Part 15 devices will need to operate in if the Metricom system is deployed and it should be noted that the Metricom system transmits over the entire band and cannot be simply avoided by choosing an alternative frequency band.

To underline the point, compare Figure 1 with Figure 2 which shows the environment due to an LMS system employing voice and data links. The areas in Figure 2 show that within the shaded areas an indoor Part 15 telephone would possibly have to select an alternative frequency but this it can simply do, as the interference only covers less than 25 kHz. It should also be noted that the LMS mobiles are moving and hence the time that they are in the vicinity of the Part 15 device is short - about 3 to 4 seconds. Even in the area surrounding the LMS fixed site, the peak number of occupied channels covers is only in the order of 0.5 MHz, thus the vast majority of the band is unaffected. The result is that the Part 15 devices will not experience any practical interference at all.

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<sup>2</sup> The effect of transmission duty factor was analyzed in Section 7 of "Desensitization Calculations for Part 15 Devices and Wideband LMS", December 9, 1994, G K Smith;

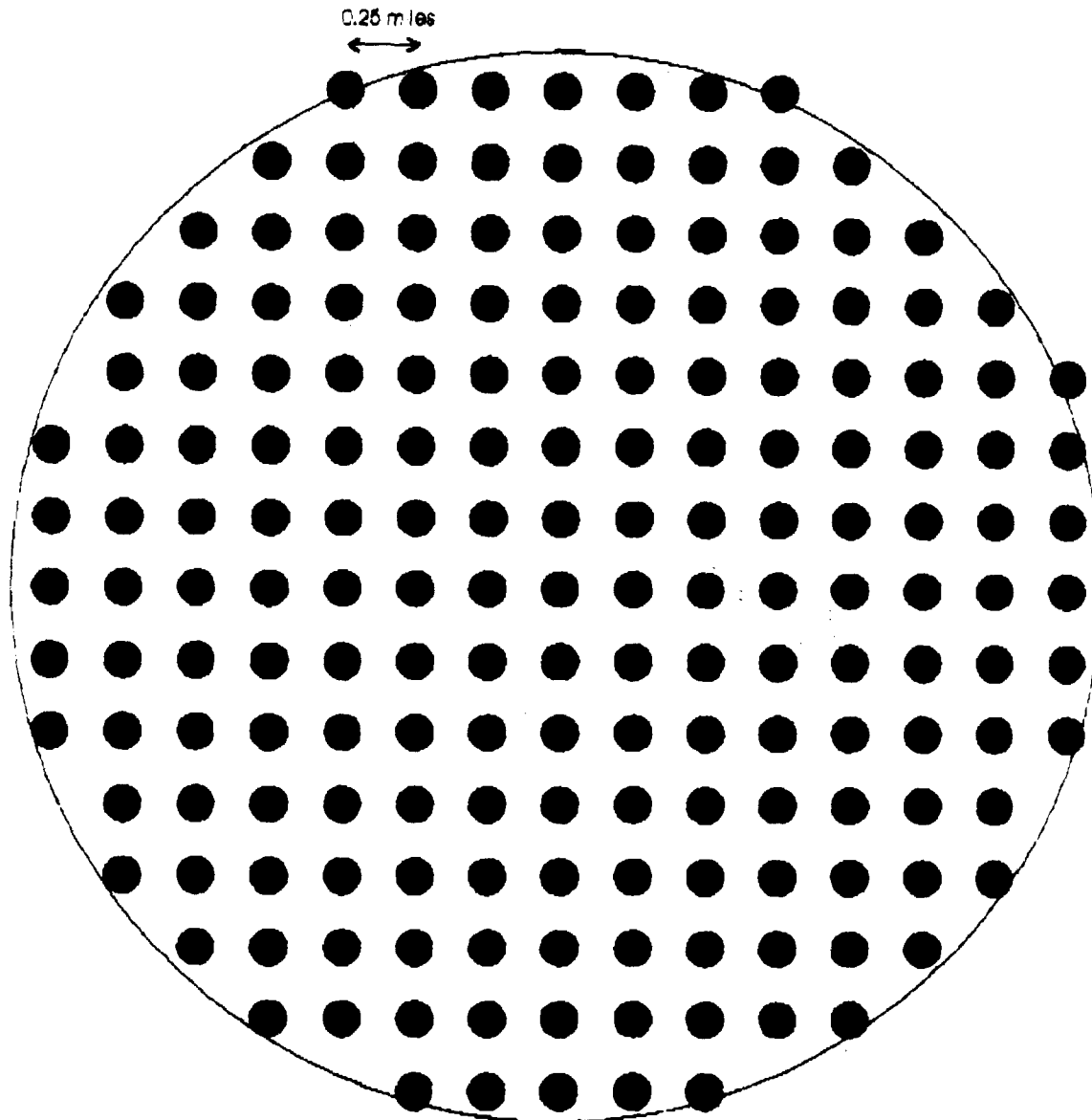
## **Conclusions**

**It is imperative that LMS providers have a rebuttable presumption of interference from Part 15 devices, and Metricom devices in particular. If not, all LMS systems will be rendered inoperable and Metricom will have created an environment in which only they could operate.**

**There is no technical reason why LMS systems cannot provide the necessary services within the allocated band and every practical and commercial reason why they should.**

**Figure 1 - Potential Metricom Interference to Indoor Cordless Phones**

Indoor devices within circles will experience blocking

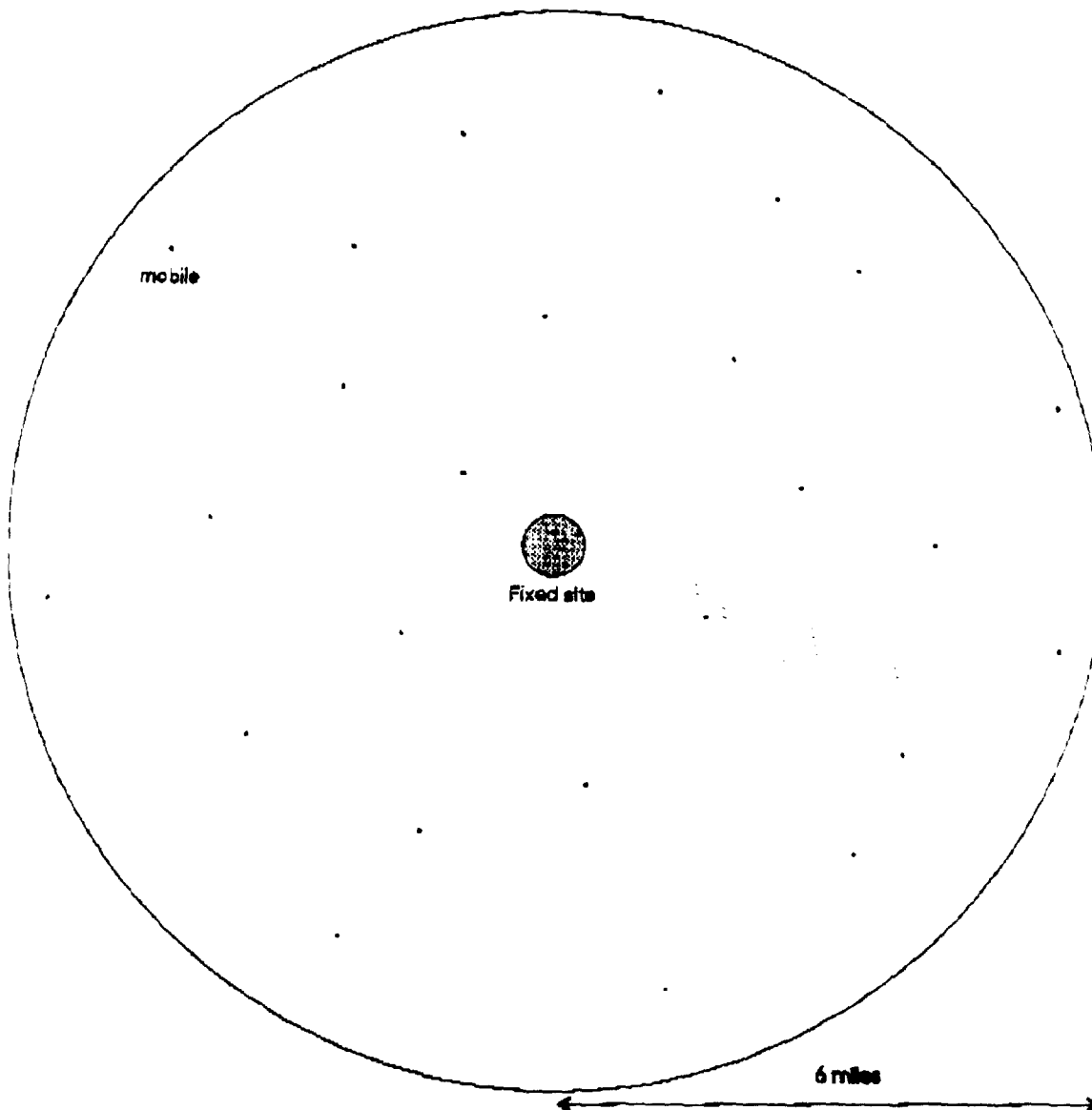


Reference Table 11A of "Desensitization Calculations for Part 15 Devices and Wideband LMS", G K Smith  
Antenna height of Metricom site amended to 50 feet.

Metricom sites placed 0.25 miles apart. Operation distance of indoor telephone 0.01 miles.  
Distance of unwanted transmitter (Metricom) must be greater than 0.06 miles.

**Figure 2 - Potential AVM Interference to Indoor Cordless Phones**

Indoor devices within circles will avoid AVM frequencies  
They can choose alternative channels



Reference Table 7/8 of "Desensitization Calculations for Part 15 Devices and Wideband LMS", G K Smith, December 9, 1993.  
Mobile 10W and 6 ft antenna height assumed.

25 mobiles, all transmitting, assumed. Operation distance of indoor telephone 0.01 miles.  
Distance of unwanted transmitter (mobiles) 0.03 miles.  
Distance of unwanted transmitter (fixed site) 0.35 miles.

**CERTIFICATE OF SERVICE**

I, América G. Wear, hereby certify that copies of the foregoing **Ex Parte** filing were forwarded this 10th day of January, 1995 by U.S. first-class mail to the following individuals:

- \* Chairman Reed E. Hundt  
Federal Communications Commission  
1919 M Street, NW, Room 814  
Washington, DC 20554
- \* Commissioner Andrew C. Barrett  
Federal Communications Commission  
1919 M Street, NW, Room 826  
Washington, DC 20554
- \* Commissioner Rachelle B. Chong  
Federal Communications Commission  
1919 M Street, NW, Room 844  
Washington, DC 20554
- \* Commissioner Susan Ness  
Federal Communications Commission  
1919 M Street, NW, Room 832  
Washington, DC 20554
- \* Commissioner James H. Quello  
Federal Communications Commission  
1919 M Street, NW, Room 802  
Washington, DC 20554
- \* Ruth Milkman  
Senior Legal Advisor  
Office of the Chairman  
Federal Communications Commission  
1919 M Street, NW, Room 814  
Washington, DC 20554



- \* Lauren J. Belvin  
Senior Legal Advisor  
Rudolfo M. Baca  
Legal Advisor  
Office of Commissioner James H. Quello  
Federal Communications Commission  
1919 M Street, NW, Room 802  
Washington, DC 20554
  - \* David R. Siddall  
Office of Commissioner Susan Ness  
Federal Communications Commission  
1919 M Street, NW, Room 832  
Washington, DC 20554
  - \* Jill M. Lockett  
Office of Commissioner Rachelle B. Chong  
Federal Communications Commission  
1919 M Street, NW, Room 844  
Washington, DC 20554
  - \* James R. Coltharp  
Office of Commissioner Andrew Barrett  
Federal Communications Commission  
1919 M Street, NW, Room 826  
Washington, DC 20554
  - \* F. Ronald Netro  
Engineering Assistant to the Chief  
Wireless Telecommunications Bureau  
Federal Communications Commission  
2025 M Street, NW, Room 5002  
Washington, DC 20554
  - \* Rosalind K. Allen, Acting Chief  
Land Mobile & Microwave Division  
Wireless Telecommunications Bureau  
Federal Communications Commission  
2025 M Street, NW, Room 5202  
Washington, DC 20554
- Martin D. Liebman, Deputy Chief  
Wireless Telecommunications Bureau  
Federal Communications Commission  
2025 M Street, NW, Room 5126  
Washington, DC 20554

\* Bruce A. Franca, Deputy Chief Engineer  
Office of Engineering and Technology  
Federal Communications Commission  
2025 M Street, NW, Room 7002-A  
Washington, DC 20554

Richard B. Engelman, Chief  
Technical Standards Branch  
Office of Engineering and Technology  
Federal Communications Commission  
2025 M Street, NW, Room 7122-B  
Washington, DC 20554

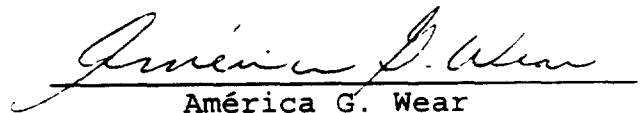
David E. Hilliard, Esq.  
Wiley, Rein & Fielding  
1776 K Street, NW  
Washington, DC 20006

Kathleen Abernathy, Esq.  
AirTouch Communications  
1818 N Street, NW  
Washington, DC 20036

Louis Gurman, Esq.  
Gurman Kirtis Blask &  
Freedman, Chartered  
1400 16th Street, NW  
Suite 500  
Washington, DC 20036

Henry M. Rivera, Esq.  
Larry S. Solomon, Esq.  
Ginsburg, Feldman & Bress  
1250 Connecticut Avenue, NW  
Washington, DC 20036

Henry Goldberg, Esq.  
Henrietta Wright, Esq.  
Goldberg & Spector  
1229 19th Street, NW  
Washington, DC 20036

  
América G. Wear